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Contact

Melissa Weber, Director of Communications
Phone: 320-589-6414, weberm@morris.umn.edu

Jenna Ray, Editor/Writer
Phone: 320-589-6068, jrray@morris.umn.edu

Biology Students Study Stomach Bacteria

*Summary: Timna Wyckoff's students are spending the summer studying *Helicobacter pylori*.*

(June 19, 2014)-Timna Wyckoff, associate professor of biology, is one of 11 University of Minnesota, Morris professors mentoring students in the Howard Hughes Medical Institute (HHMI) Undergraduate Summer Research Program. Chloe Hanson '16, Lake Park, and Laura Borkenhagen '16, Truman, were selected as student researchers for Wyckoff's project.

Wyckoff and her students are spending the summer studying *Helicobacter pylori* (*H. pylori*), a Gram-negative bacterium found in the human stomach. These bacteria infect about half of the world's population—ten percent of that portion will develop symptoms ranging from gastritis to peptic ulcer disease to gastric cancer.

H. pylori's corkscrew shape is thought to help it access the stomach lining and move through viscous liquid environments. To understand its shape and inform future treatment methods, Hanson and Borkenhagen will mutate the bacteria by applying several molecular biology, microbiology, and biochemistry techniques.

Their research involves a lot of multitasking as they perform various tests and read existing literature on the bacteria. Under Wyckoff's leadership, they are developing and applying skills that will last beyond their undergraduate careers.

"It's a good first step towards a career in research," says Borkenhagen. "It helps you make a decision about a potential career path by letting you see firsthand how research goes."

"This is an opportunity that many students will not be able to experience until graduate school," adds Hanson. "It's an exciting prospect for my future with great mentorship."

The team plans to present its findings at an HHMI poster reception in September. Wyckoff plans to conduct further research on *H. pylori* during the upcoming school year.

"We want to have lots of things going on in the lab," says Wyckoff. "Students come and go with these long-term research projects, and they all contribute each time. I'm impressed with how quickly Laura and Chloe have grasped the techniques, and they really recognize the big picture."

The Undergraduate Summer Research Program is supported in part by a grant to the University of Minnesota, Morris from the Howard Hughes Medical Institute through the Precollege and Undergraduate Science Education Program. Additional information is available at morris.umn.edu/hhmi/.

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